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POWDERY MILDEW OF CRAPE MYRTLE

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Powdery mildew of crape myrtle was reported in Florida in 1925, and since then it has been found widely distributed over the state. Though it varies in severity from year to year, it is always by far the most serious disease of this plant.

THE DISEASE

Almost every crape myrtle plant suffers to some extent from the effects of this disease every year and many are severely disfigured by its ravages. Plants in hedges and sheltered or shaded positions suffer most from the attack of powdery mildew.

The disease appears first in early spring on the young shoots and advances later to include leaves and different parts of the inflorescence. The affected parts soon become heavily covered with a white mealy growth which is quite dusty, because of the innumerable spores present. When young tissues are attacked they become badly malformed. Young leaves are stunted, abnormally thickened, and may not attain a third of their normal size. Stems of young shoots are stunted, the internodes remain short and the stems irregular. When the young flower clusters are attacked, the flower stems are stunted and the buds usually fail to develop into flowers. Quite frequently the diseased portions of the plant assume an unnatural reddish color beneath the white, mealy fungous growth. The diseased leaves and buds usually drop in a week or two, but diseased stems frequently sprout again and may produce normal growth, especially when hot weather ensues.

When older leaves and stems become infected, there is no malformation of these organs. The leaves may even remain attached to the stem until the mealy coating weathers off, but they usually drop soon after the entire surface has been attacked by the fungus.

THE CAUSE

The organism causing mildew of crape myrtle belongs to the group of fungi, *ERYSIPHACEAE*, known as powdery mildews. The common name arises from the fact that these fungi always produce a powdery, white coating on the plant attacked. Like other members of this group, the crape myrtle fungus has two forms or stages with the summer form most conspicuous and doing all of the damage. With most fungi of this group, the summer form disappears in the fall. In the case of the crape

myrtle mildew, this summer or imperfect stage seems able to invade the dormant buds and hibernate there. With the advent of plant growth in the spring, the fungus resumes activity and attacks the young sprouts.

The fact that the fungus is able to live from one growing season to another without a true resting stage may account for the scarcity of the perfect or over-wintering form. Only once has this perfect stage been found and then only in a very small quantity, so that it is not important in the spread of the disease. The characters are such, however, as to classify the fungus as a species of the genus *Erysiphe*, an important group of plant parasites.

IMPERIAL MYCOLOGI

SEASONAL DEVELOPMENT

The first indication of the presence of the disease occurs in early spring before the new shoots are more than a few inches long. At this time a few stunted shoots can be found, projecting barely beyond the bud scales and covered with a dense white coating of the conidia. These minute deformed shoots are very inconspicuous and easily overlooked, but they are the centers from which the rest of the plants become infected.

The first conspicuous growth of the fungus occurs on the young leaves as small circular white patches in which the fungus threads radiate from the center. By the time the spot is a half inch in diameter, spores are being formed at the center of the spot ready to spread the disease still further. After a few leaves or one shoot has become covered with the mildew, the whole plant may show general infection in a week or 10 days under favorable conditions. The spores are produced in such enormous numbers that the spread of the disease is very rapid.

Apparently the hot weather of midsummer is not favorable for the growth of the fungus, for it disappears from all the plant except the few succulent shoots near the center and base of the plants where the sun seldom penetrates. These infected shoots and leaves carry the organism through the hot weather and become sources of infection as soon as cooler weather, more favorable to the development of the fungus, follows in late September. In the fall the disease may be nearly as serious as in the spring on young growth. In addition, many of the mature leaves become infected but with less serious results. The total damage to the crape myrtle is slight in the fall since most of the growth is mature.

CONTROL

Experiments indicate that commercial lime-sulfur solution is a satisfactory spray to control powdery mildew of crape myrtle. Solutions stronger than one part of lime-sulfur to 80 of water should not be used.

The spray should be applied just as the buds burst in the spring, so that the infected sprouts may be covered and prevent the production of spores. A second application of the spray should be made about two weeks later to prevent infection of the growth which has developed since the first application.